

Fig. 1

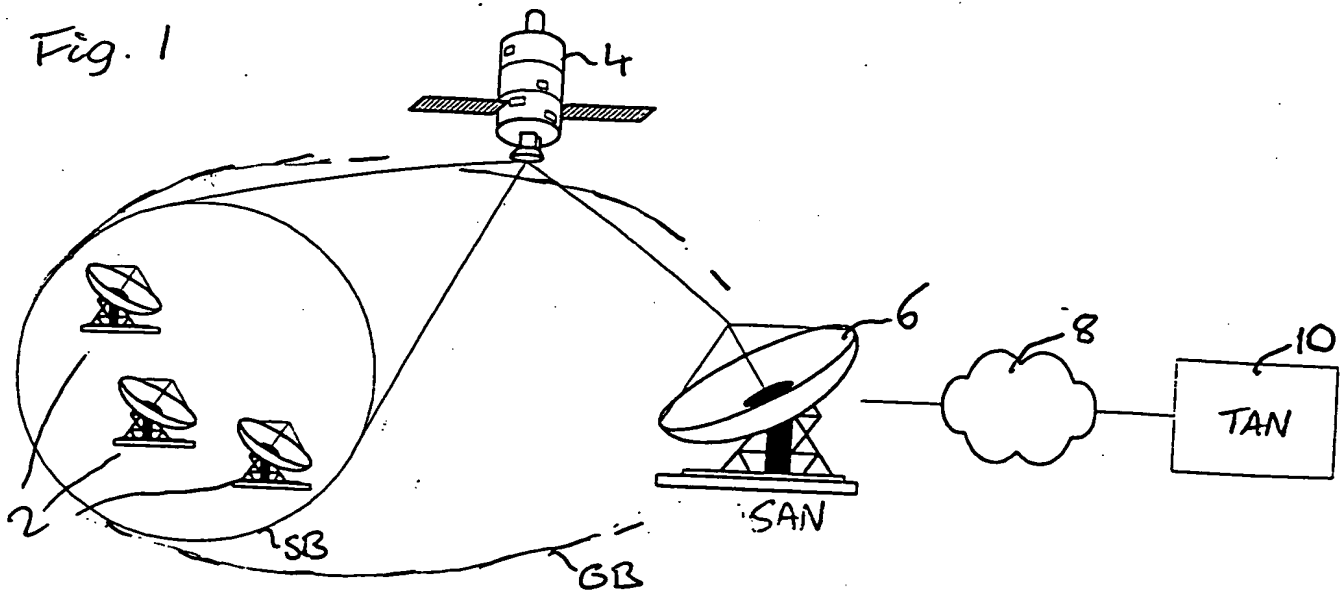


Fig. 2

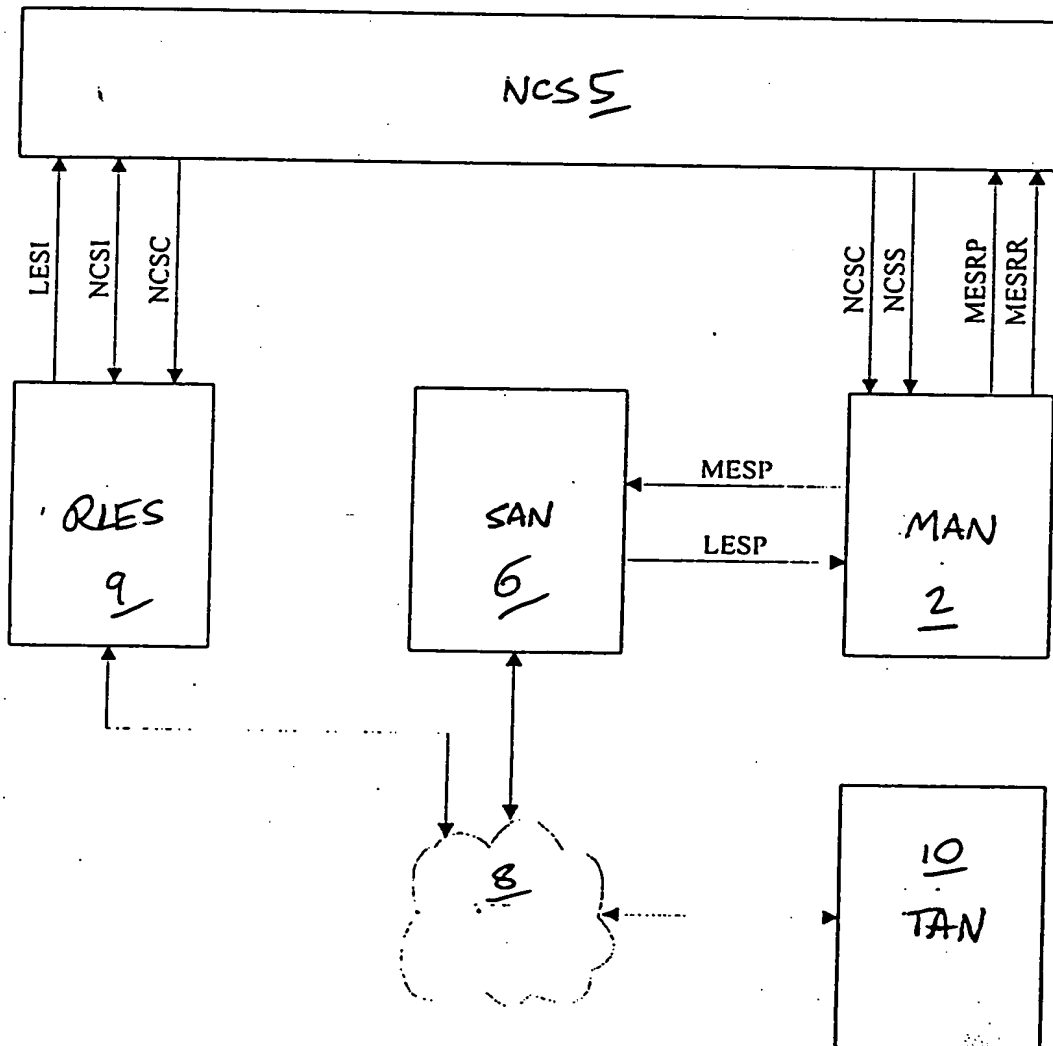
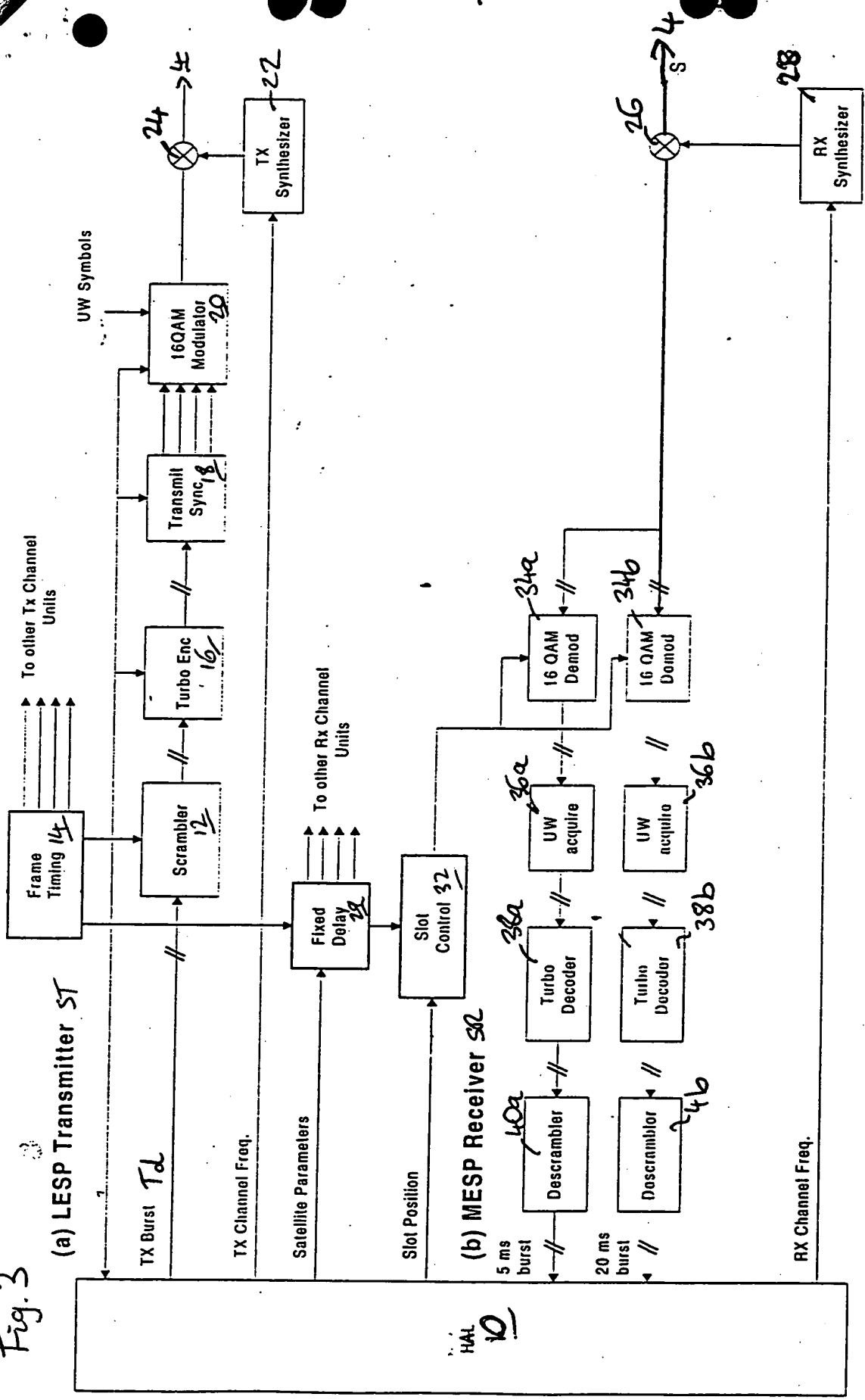
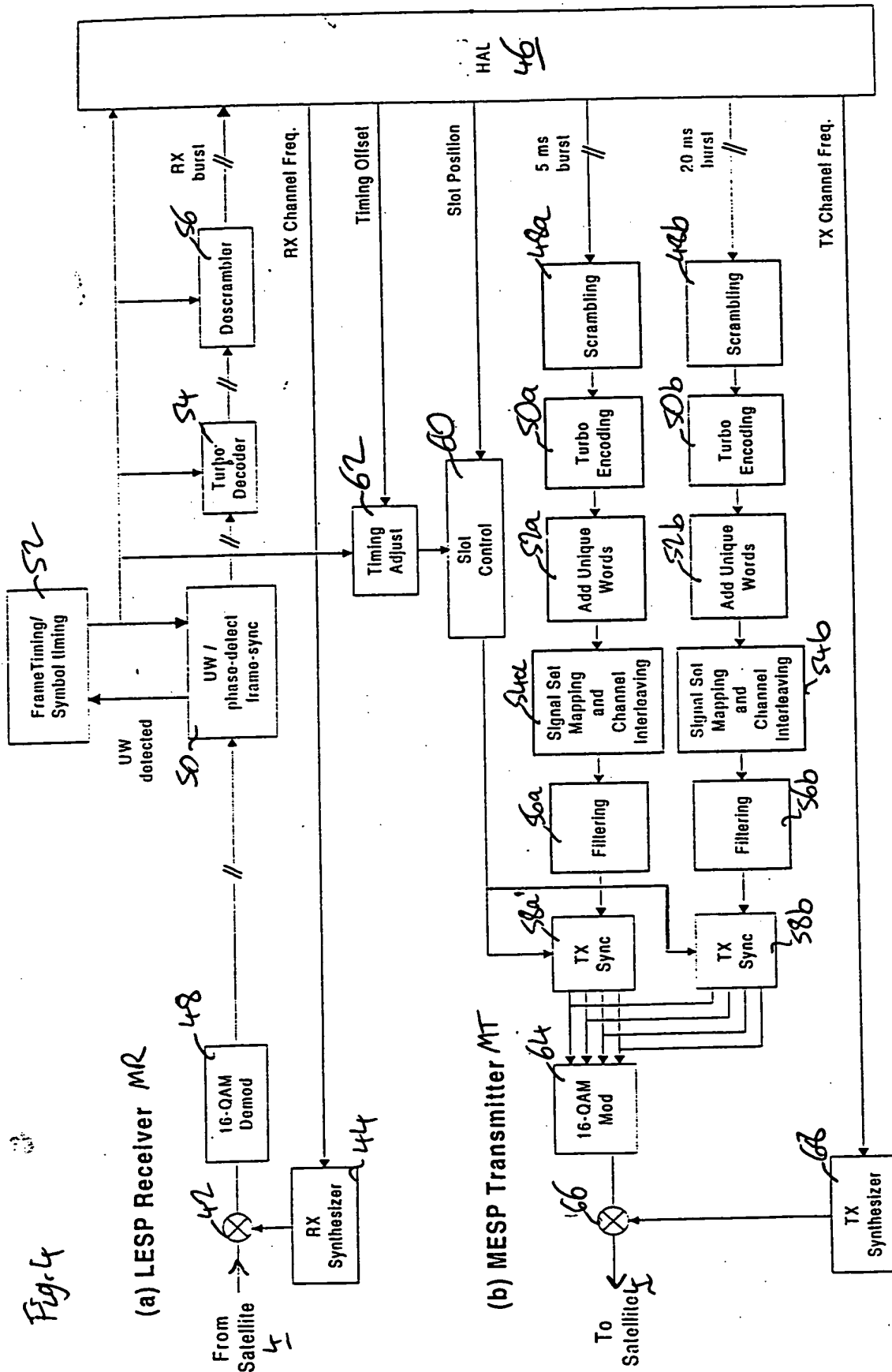


Fig. 3



—//— : Parallel Interface

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— : Parallel interface

Fig. 5a

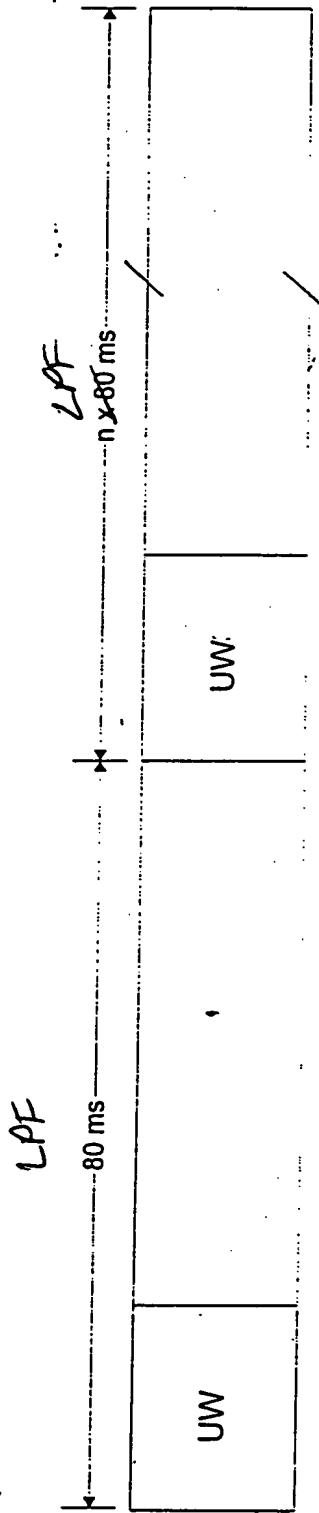
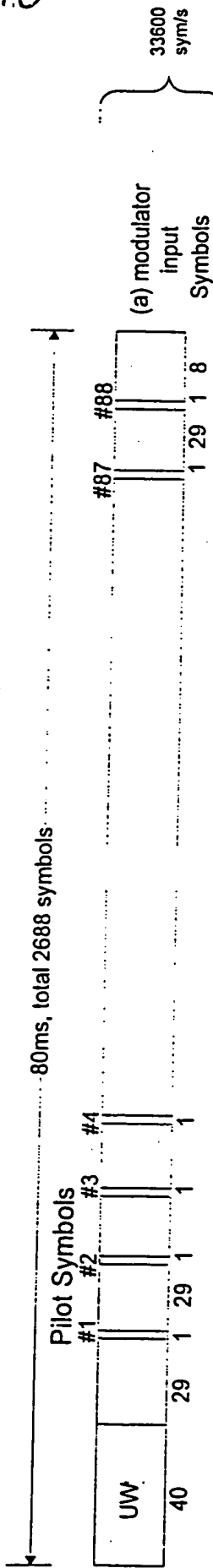


Fig. 5b



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Fig Sc

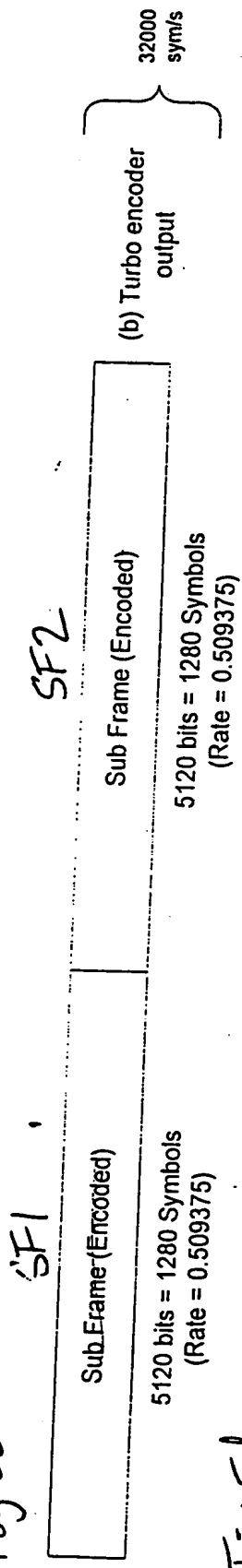
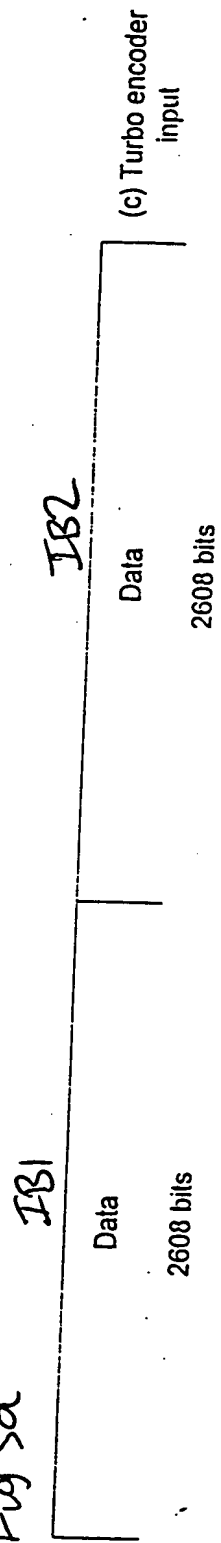


Fig Sd



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Fig. 6a

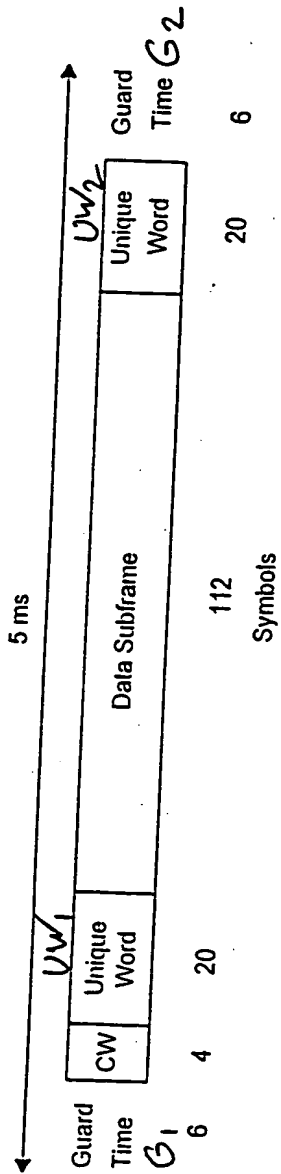


Fig. 6b

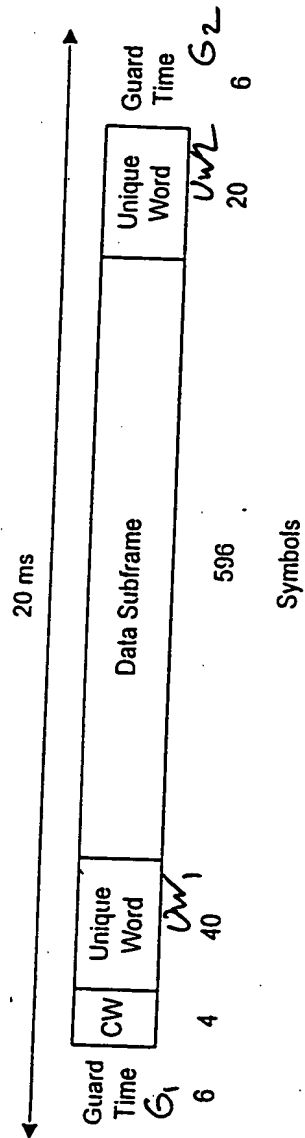


Fig. 7

The diagram illustrates the timing sequence for the MESP system, starting with the reception of a Low Earth Station Packet (LESP) and ending with the transmission of a Medium Earth Station Packet (MESP).

LESP Frame Structure: The LESP frame is divided into two subframes, SF1 and SF2. Each subframe contains a sequence of slots (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40). The frame is divided into two subframes, SF1 and SF2, each containing 20 slots. The frame is divided into two subframes, SF1 and SF2, each containing 20 slots.

Timing Sequence:

- LESP Reception:** The LESP frame is received. The duration of the LESP frame is 40ms.
- LESP Demodulation:** The LESP frame is demodulated. The duration of the LESP demodulation is 40ms.
- MESP Initialization for Transmission:** The MESP is initialized for transmission. The duration of the MESP initialization for transmission is 30ms.
- MESP Transmission Delay Initial Timing-Offset:** The MESP transmission delay initial timing offset is 120ms.
- Selection of Random Access Slot:** A random access slot is selected. The duration of the random access slot is 40ms.
- MESP Transmission (5ms burst):** The MESP is transmitted as a 5ms burst. The duration of the MESP transmission is 5ms.

Selection of Random Access Slot for Transmission R is based upon:

- $R = \text{random}((M-1))$; where M is the number of ignored slots such that $M = \left\lceil \frac{\text{uncertainty}}{5\text{ms}} \right\rceil$; where uncertainty is the timing uncertainty at the MES (which is initially equal to 40ms, resulting in 8 slots ignored); and M is the number of consecutive Random Access Slots

Note that slots are numbered 0..M-1

Maximum Timing Uncertainty of 40ms, corresponding to a maximum of 8 x 5ms slots

Start of MESP Reception at the MES antenna

Initial Timing Acquisition Group of Random Access Slots

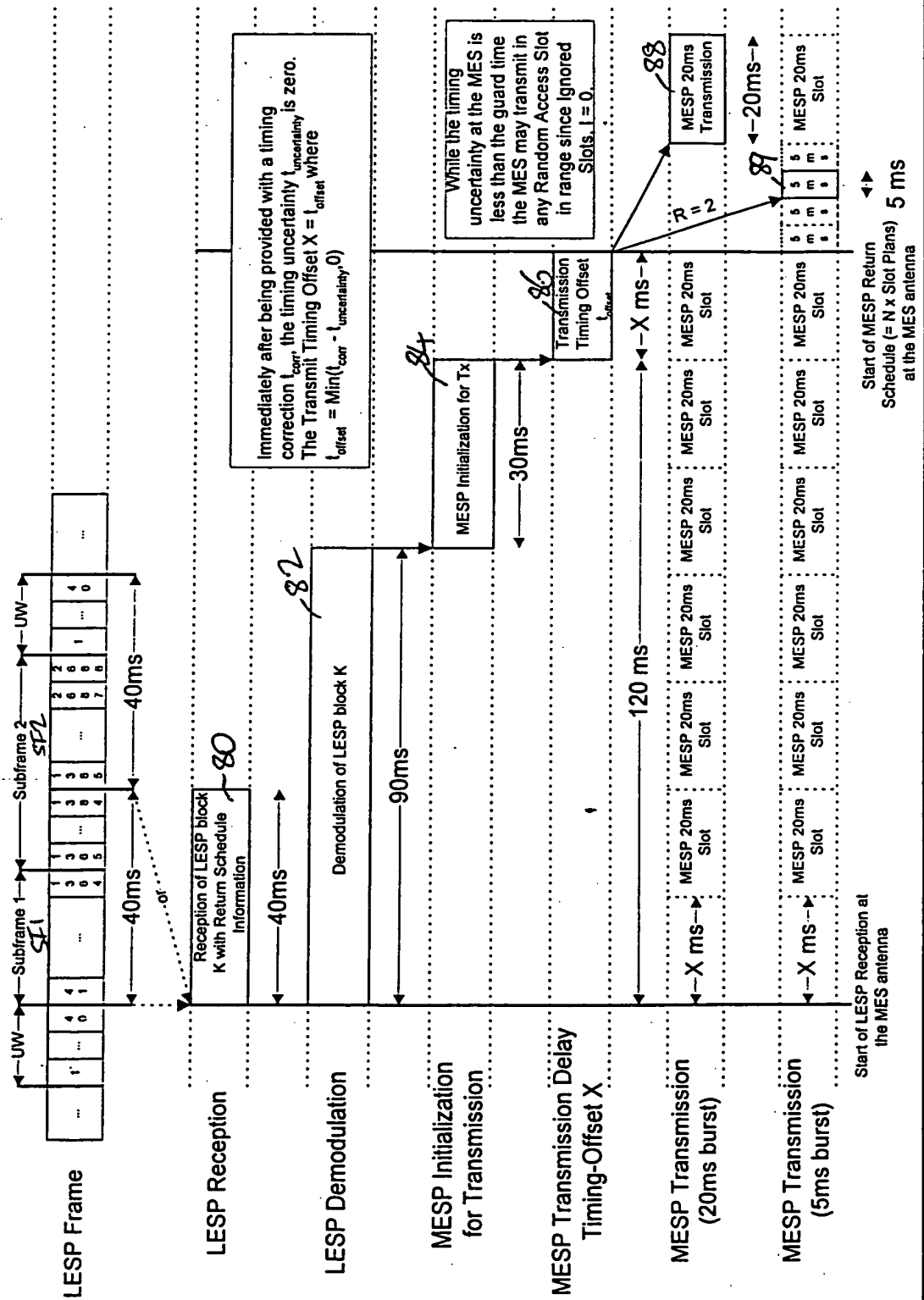
Number of slots = M, where M=9, 10, ... 16

(A Timing Acquisition Group must contain at least 9 slots)

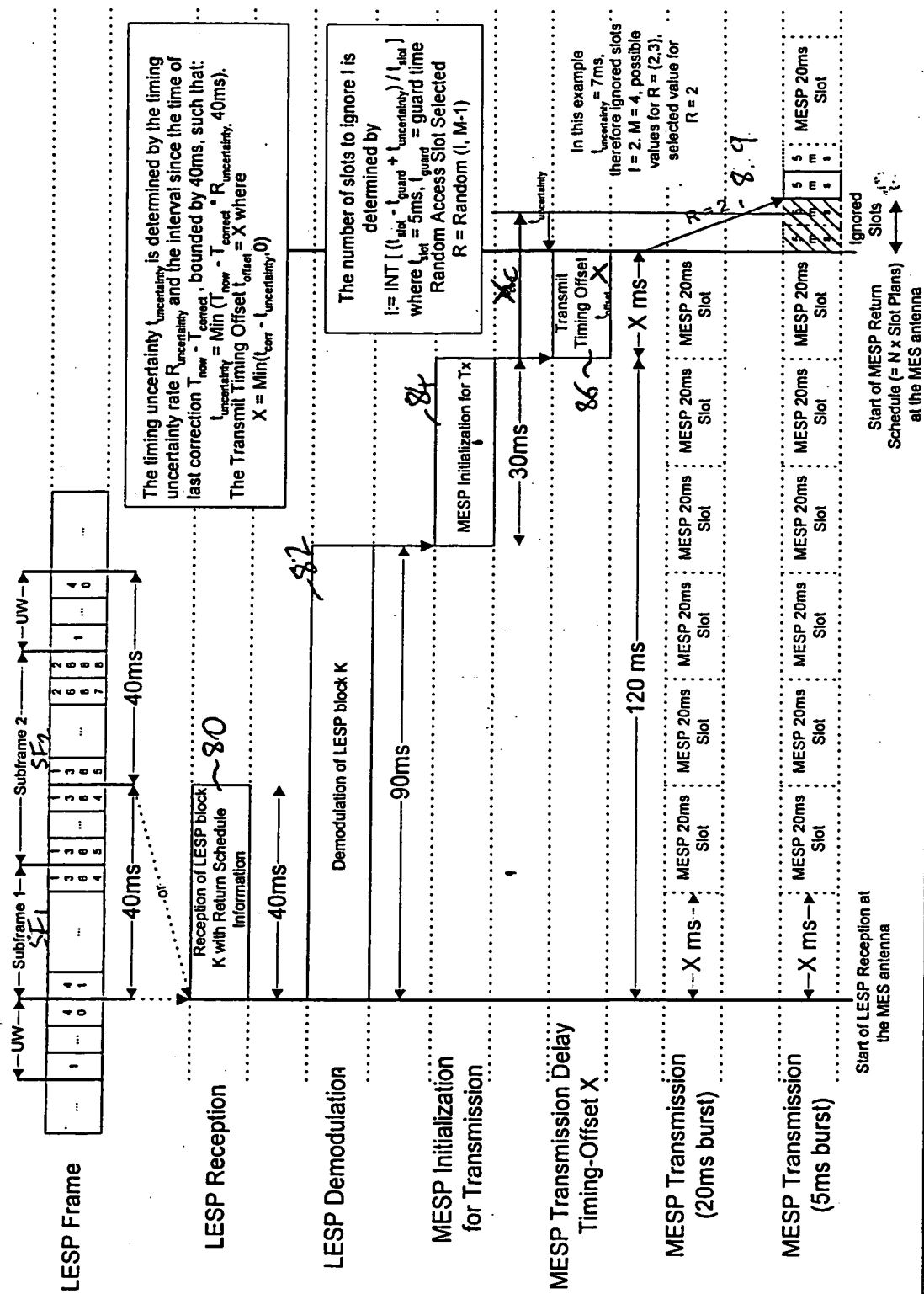
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Fig. 8a



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Fig. 9

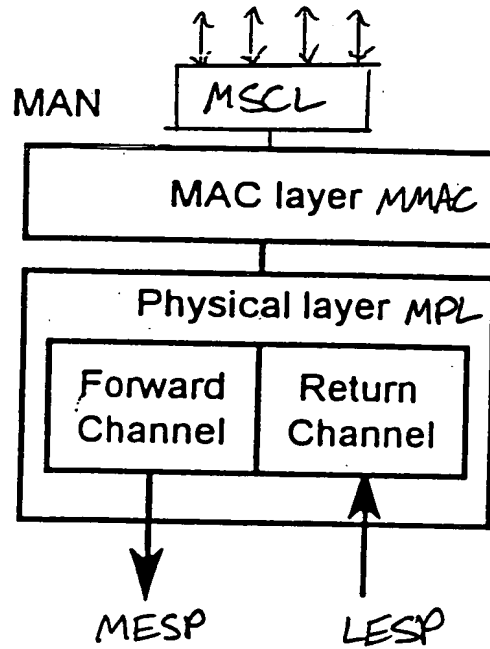


Fig. 10

